REMARKS

Claims 1-19 are in the case as of the date of this amendment. No claims have been allowed.

Claims 1-2, 5-8, 10-16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (U.S. Patent No. 4,304,752) in view of Campbell et al. (U.S. Patent No. 5,318,759).

Claims 1-2 and 4-19 are rejected under 35 U.S.C. 103(a) as being obvious over Nuckols et al. (U.S. Patent No. 6,463,925) in view of Jenkins et al.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nuckols et al., together with Jenkins et al., as applied to claims 1-2 and 4-19 above, and further in view of Golben (U.S. Patent No. 6,508,866).

These rejections are respectfully traversed.

Jenkins et al. appear to teach an apparatus that removes all oxygen from a flow of air by mixing hydrogen with the air, and then passing the mixture over a catalyst that promotes a hydrogen-oxygen reaction to remove all oxygen. Oxygen concentration of the catalyst output can be monitored and used to adjust the amount of incoming air or hydrogen used in the mixture to assure that all oxygen is removed. See column 2, line 48 to column 3, line 14.

Campbell et al. appear to teach, in relevant portion, a deoxo unit that utilizes the reaction of hydrogen and oxygen over a noble metal catalyst in an effort to remove all oxygen from a

nitrogen/oxygen mixture. See column 3, lines 21-23 and 36-55.

Nuckols et al. appear to teach a hot water heater for a diver in which heat is generated when hydrogen is mixed and reacts with oxygen from a diver's breathing gas. Hydrogen and breathing gas amounts are adjusted to control temperature of the water being heated. See column 4, lines 47-65.

Golben appears to teach, in relevant portion, that a metal hydride material can be used to retain and store a volume of hydrogen gas.

In contrast, Applicants teach and claim (for example, in claim 1) a system for reducing the amount of oxygen in an oxygen-containing gas within a closed environment. A controllable means for mixing, in response to a control signal, mixes a selected amount of hydrogen gas from a source thereof with a portion of the oxygen-containing gas from the closed environment to form a first gas mixture that includes hydrogen and oxygen. A catalyst coupled to the controllable means for mixing receives the first gas mixture and causes a reaction between the hydrogen and at least a portion of the oxygen in the first gas mixture. As a result, a second gas mixture is formed and is returned to the closed environment. The second gas mixture has a lower percentage of oxygen than the first gas mixture and contains oxygen in an amount sufficient to make the second gas mixture breathable. At least one oxygen sensor, positioned in the closed environment and

coupled to the controllable means for mixing, generates the control signal (to which the controllable means for mixing responds) when oxygen levels of the oxygen-containing gas in the closed environment reach a threshold level defined for an ambient pressure in the closed environment. Similar amendments have been made to Applicants' other independent claims 8 and 15. Support for the amended claim language can be found in Applicants' originally-filed specification at page, 7, line 24 to page 8, line 18.

None of the prior art teach or suggest a system or method of reducing the amount of oxygen in a closed environment where such oxygen reduction is triggered when a threshold level of oxygen defined for an ambient pressure in the closed environment is reached, and where the reduced oxygen gas is returned to the closed environment with enough oxygen therein to make the returned gas breathable. Both Jenkins et al. and Campbell et al. teach systems for completely removing oxygen from a gas. Therefore, these references do not teach or suggest, singly or in combination, controlling the mixing of hydrogen and an oxygen-containing gas in order to generate a resulting breathable gas mixture (i.e., Applicants' claimed "second gas mixture") that is to be returned to the environment from which the oxygen-containing gas was obtained. Accordingly, it is respectfully submitted that both of these references teach away from Applicants' claims where

an oxygen-containing breathable gas is produced.

Furthermore, neither Jenkins et al. or Campbell et al. teaches or suggests the use of an oxygen level that is associated with an ambient pressure of a closed environment as the means (i.e., Applicants claimed "threshold") to trigger the onset of an oxygen-reduction reaction as Applicants teach and claim. Thus, neither Jenkins et al. or Campbell et al. teach or suggest any method to control a closed environment to provide a breathable gas therein having safe levels of oxygen based on the closed environment's ambient pressure. Such teaching is only present in Applicants' claimed system and method. Accordingly, it is respectfully submitted that claims 1-2, 5-8, 10-16 and 18-19 are patentable over the combination of Jenkins et al. and Campbell et al.

Nuckols et al. do not teach or suggest the use of an oxygen sensor to trigger an oxygen-reducing reaction as Applicants' teach and claim. Rather, Nuckols et al. take breathing gas 36 from a source 38 thereof (i.e., a closed environment), mix the breathing gas with hydrogen 32, pass the mixture over a catalyst 16 to generate heat, and then use some of the resulting treated gas for a diver's breathing purposes. That is, the treated gas is not (emphasis added) returned to the closed environment of source 38. Thus, Nuckols et al. does not take gas from a closed environment, perform an oxygen-reducing operation on the gas as controlled by

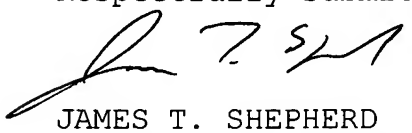
an oxygen level for an ambient pressure in the closed environment, and then return the oxygen-reduced gas to the closed environment as Applicants' teach and claim. Indeed, Nuckols et al. does not teach or suggest the use of (or need for) an oxygen sensor as Nuckols et al. is only concerned with temperatures produced by the hydrogen-oxygen reaction. Furthermore, as described above with respect to Jenkins et al. and Campbell et al., Nuckols et al. does not teach or suggest any method to control a closed environment to provide a breathable gas therein based on the closed environment's ambient pressure. Accordingly, it is respectfully submitted that claims 1-2 and 4-19 are patentable over the combination of Nuckols et al. and Jenkins et al.

Finally, Golben merely discloses the use of a metal hydride material as the source of a hydrogen gas. This teaching is well known in the art as Applicants' acknowledged in their originally-filed specification. However, Golben does not teach or suggest anything to correct the above-noted deficiencies of Jenkins et al, Campbell et al. or Nuckols et al. Accordingly, it is respectfully submitted that claim 3 is patentable over the combination of Nuckols et al., Jenkins et al. and Golben

None of the prior art cited by the Examiner appears to teach or even suggest the unique combination taught by Applicants. In view of all the art of record, the claims remaining in the case are considered to patentably distinguish thereover.

It is submitted in view of these remarks that all grounds for rejection have been removed by the foregoing amendment. For the hereinabove reasons, Applicants solicit an early and favorable response.

Respectfully submitted,



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